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From: Mary Beckman via PNNL
Published June 13, 2016 11:00 AM

New material has potential to cut costs and make nuclear fuel recycling cleaner

Researchers are investigating a new material that might help in nuclear fuel recycling and waste reduction by capturing certain gases released during reprocessing. Conventional technologies to remove these radioactive gases operate at extremely low, energy-intensive temperatures. By working at ambient temperature, the new material has the potential to save energy, make reprocessing cleaner and less expensive. The reclaimed materials can also be reused commercially.

Appearing in Nature Communications, the work is a collaboration between experimentalists and computer modelers exploring the characteristics of materials known as metal-organic frameworks.

"This is a great example of computer-inspired material discovery," said materials scientist Praveen Thallapally of the Department of Energy's Pacific Northwest National Laboratory. "Usually the experimental results are more realistic than computational ones. This time, the computer modeling showed us something the experiments weren't telling us."

Image credit: Spent Fuel Storage Installation via [Connecticut Yankee](#)
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